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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,121	09/28/2004	Koichiro Kaku	1254-0259PUS1	3303
2292 7590 01/02/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			EXAMINER KRUSE, DAVID H	
			ART UNIT 1638	PAPER NUMBER
			NOTIFICATION DATE 01/02/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/509,121

Applicant(s)

KAKU ET AL.

Examiner

David H. Kruse

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2007 and 12 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 2-8 and 10-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/9/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

STATUS OF THE APPLICATION

1. This Office action is in response to the Amendment and Remarks filed 1 August 2007 and the Remarks filed on 12 October 2007.
2. The Examiner acknowledges Applicants' perfection of their claim of foreign priority and submission of a translation of the foreign priority document on 9 August 2007.
3. The Abstract as amended is approved by the Examiner.
4. The rejection of record under 35 USC § 112, second paragraph has been obviated by Applicants' amendments.
5. The rejection under Obviousness Type Double Patenting is withdrawn.
6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

7. Claims 1-8 and 10-12 remain withdrawn from further consideration pursuant to 37 CFR § 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 12 December 2006.
8. Applicants' arguments concerning rejoinder of claims 10-12 in the Remarks filed 12 October 2007 have been fully considered but are not found to be persuasive because as stated in the previous Office action, said claims are viewed as non-elected by original presentation.

9. This application contains claims 1-8 and 10-12 drawn to an invention nonelected with traverse in the reply filed on 12 December 2006. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR § 1.144) See MPEP § 821.01.

10. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR § 1.48(b) and by the fee required under 37 CFR § 1.17(i).

Claim Rejections - 35 USC § 112

11. Claims 9 and 13 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The instant claims are indefinite because SEQ ID NO: 1 is a nucleic acid sequence not an amino acid sequence; hence the metes and bounds of the claim are unclear.

Claim Rejections - 35 USC § 102/103

12. Claims 9 and 13 remain rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Croughan (WO 01/85970 A2, published 15 November 2001) taken with the evidence of Shimizu *et al* (NCBI Accession BAB20813, 14 April 2001). This rejection is repeated for the reason of record as set forth in the last Office action mailed 9 March 2007. Applicant's arguments filed 1

August 2007 and 12 October 2007 have been fully considered but they are not persuasive.

Applicants argue that Croughan merely discloses a gene coding for ALS in which a serine at position 627 of wild type rice ALS is replaced by isoleucine at SEQ 1D NOs: 4 and 5 (S627I mutant ALS). Applicants argue that Croughan has never demonstrated the characteristic of the S627I mutant ALS, i.e. herbicide tolerance of the S627I mutant ALS. Applicants argue that the disclosed sequence within the Croughan reference was *reported* as a sequence that is herbicide resistant, although the nature of the herbicide resistance was not specified in the BLAST description (Croughan page 7, lines 22, 24). Applicants argue that in fact Croughan recites at claim 38 "wherein the encoded AHAS does not have an isoleucine residue at amino acid position 627." (paragraph spanning pages 8 and 9 of the Remarks filed 1 August 2007). These arguments are not found to be persuasive. Croughan had disclosed that herbicide resistant acetolactate synthase (ALS) gene were known in the art as useful for selecting resistant transformants. Croughan had disclosed a gene encoding an ALS wherein the ALS has an amino acid sequence in which a serine corresponding to serine at position 627 of Applicants' SEQ ID NO: 2 is replaced by isoleucine. Croughan had disclosed that an S627 mutant ALS is resistant to pyrithiobac sodium herbicides at claim 90. As stated in the previous Office action Croughan's negative limitation at claim 38 was obviously an attempt to claim around a recognized prior art species and to a teaching away.

Applicants argue that the present inventor clearly shows that the S627I mutant ALS has a very unique herbicide tolerance (See Example 11). Applicants argue that

they consider that the method according to Claim 9 can provide unexpected results such that the plant having the S627I mutant ALS can be cultivated in the presence of bispyribac-sodium herbicide, pyriithobac-sodium herbicide, and/or pyriminobac herbicide (page 9, 2nd paragraph of the Remarks filed 1 August 2007). These arguments are not found to be persuasive for the reasons given above.

Applicants argue that the Croughan reference cannot anticipate the present claims because the cited reference fails to disclose all instantly claimed features (page 9, 3rd paragraph of the Remarks filed 1 August 2007). These arguments are not found to be persuasive. Croughan had disclosed all of the elements of the claimed method as outlined in the previous Office action and addressed above.

Applicants argue that a *prima facie* case of obviousness has not been established for this case since Croughan does not anticipate the present claims (as described above) and that Croughan teaches away from the amino acid substitution serine to isoleucine at position 627 of the wild-type rice ALS (page 12, 1st paragraph of the Remarks filed 1 August 2007). This argument is not found to be persuasive. In the previous Office action, the Examiner clearly stated that it would have been obvious to one of ordinary skill in the art that claim 38 of Croughan was an attempt to claim around a prior art species which was acknowledged on page 7, 5th paragraph of the specification, and in SEQ ID NOs: 4 and 5 (page 6 of the previous Office action). The Examiner does not view an attempt to exclude a species known in the prior art as teaching away from such a species.

Applicants argue that Croughan reference must be read in its entirety; including the teaching away of a point substitution at position 627 with asparagine for herbicide tolerance and avoiding isoleucine at position 627 (see claim 38 Croughan -"does not have an isoleucine residue at amino acid position 627"). Applicants argue that taken the reference as a whole, it may indicate that isoleucine at position 627 may have disadvantages when employed in wild type ALS (page 12, 3rd paragraph of the Remarks filed 1 August 2007). This argument is not found to be persuasive. Croughan teaches multiple amino acid substitutions at S627 at claim 87 and that the encoded AHAS (ALS) is resistant to a pyrithiobac sodium herbicide at claim 90, line 4. In fact, Croughan teaches that other mutations at S627 were known in the art that produced herbicide tolerance (page 11, 4th paragraph).

Applicants argue that a reference which leads one of ordinary skill in the art away from the claimed invention cannot render it unpatentably obvious (*See, Dow Chem. Co. v. American Cyanamid Co.* 816 F2d 617, (CAFC 1987)) (page 12, 4th paragraph of the Remarks filed 1 August 2007). This argument is not found to be persuasive because Croughan does not teach away from the claimed method as addressed above.

Applicants argue that the Croughan reference teaches away from point substitution of the claimed invention. Applicants argue that the Croughan reference, taken in its entirety, would teach away from the isoleucine substitution at position 627, since Croughan discussed a different amino acid (asparagine) substitution and avoided isoleucine in claim 38. (page 13, 4th paragraph of the Remarks filed 1 August 2007). This argument is not found to be persuasive for the reasons given above.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. No claims are allowed.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David H. Kruse, Ph.D. whose telephone number is (571) 272-0799. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached at (571) 272-0975. The central FAX number for official correspondence is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (571) 272-1600.

DAVID H. KRUSE, PH.D.
PRIMARY EXAMINER

David H. Kruse, Ph.D.
21 December 2007



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16. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

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